

WHAT WE CLAIMED IS:

1. An image processing apparatus that generates one still image having a high pixel density from multiple images, said image processing apparatus comprising:
 - an image extraction module that extracts the multiple images used for generation of the one still image;
 - a deviation computation module that computes a degree of deviation between each combination of the extracted multiple images;
 - an image selection module that selects at least two images among the extracted multiple images, based on the computed degrees of deviation; and
 - an image composition module that combines the at least two selected images to generate the one still image.
- 15 2. An image processing apparatus in accordance with claim 1, wherein said image extraction module has a specification module that specifies a reference image as a base of composition of the one still image, and
said image extraction module extracts the multiple images in a correlated order with the specified reference image.
- 20 3. An image processing apparatus in accordance with claim 2, wherein the multiple images are consecutively arranged in time series, and
the correlated order is a time series order from the specified reference image.
- 25 4. An image processing apparatus in accordance with any one of claims 1 through 3, said image processing apparatus further comprising:
 - an image composition number display module that displays number of images used for image composition, prior to generation of the one still image.

5. An image processing apparatus in accordance with any one of claims 1 through 4, said image processing apparatus further comprising:

an alarm module that gives an alarm when number of the at least two selected images does not reach a preset minimal number.

6. An image processing apparatus in accordance with any one of claims 1 through 5, said image processing apparatus further comprising:

an execution selection module that selects either execution or non-execution of the image composition when number of the at least two selected images does not reach a preset minimal number.

7. An image processing apparatus in accordance with any one of claims 1 through 6, said image processing apparatus further comprising:

a discontinuation module that discontinues the image composition when number of the at least two selected images does not reach a preset minimal number.

8. An image processing apparatus in accordance with any one of claims 1 through 7, wherein said image selection module has an exclusion module that excludes any image having the computed degree of deviation out of a preset threshold range from the extracted multiple images, and

said image selection module selects images other than the image excluded by said exclusion module as the at least two images.

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9. An image processing apparatus in accordance with claim 8, wherein the computed degree of deviation is at least either of a translational deviation between two images in a translational direction and a rotational deviation between the two images in a rotational direction, and

said exclusion module excludes any image having at least either of the translational deviation and the rotational deviation out of the preset threshold range.

5 10. An image processing apparatus in accordance with claim 9, wherein the preset threshold range is expressed by a number of pixels set as a rate to a total number of pixels constituting the one still image.

10 11. An image processing apparatus in accordance with claim 9, wherein the preset threshold range of the translational deviation is ± 16 pixels and the preset threshold range of the rotational deviation is $\pm 1^\circ$.

15 12. An image processing apparatus in accordance with any one of claims 1 through 11, wherein the multiple images are multiple frame images included in a moving image.

20 13. An image processing apparatus in accordance with any one of claims 8 through 11, wherein the multiple images are multiple still images having information of an exposure time, which varies according to lightness of a photographic subject at a shooting time,

 said image processing apparatus further comprising:
 a threshold setting module that sets the threshold range for each still image, based on the varying exposure time.

25 14. An image processing method that generates one still image having a high pixel density from multiple images, said image processing method comprising the steps of:

 extracting the multiple images used for generation of the one still image;
 computing a degree of deviation between each combination of the

extracted multiple images;

selecting at least two images among the extracted multiple images, based on the computed degrees of deviation; and

combining the at least two selected images to generate the one still image.

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15. An image processing method in accordance with claim 14, said image processing method further comprising the step of:

discontinuing the image composition when number of the at least two selected images does not reach a preset minimal number.

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16. An image processing apparatus that generates one still image having a high pixel density from multiple images, said image processing apparatus comprising:

an extraction unit that extracts the multiple images used for generation 15 of the one still image;

an operator that computes a degree of deviation between each combination of the extracted multiple images, based on data of the multiple images;

a selector that selects at least two images among the extracted multiple 20 images, based on the computed degrees of deviation; and

an image composition unit that combines the at least two selected images to generate the one still image.

17. A computer program product for generating one still image having a 25 high pixel density from multiple images, said computer program product comprising a program code that is executed by a computer and a recording medium that records the program code so as to be read by the computer, wherein the program code includes:

a first program code of extracting the multiple images used for generation

of the one still image;

a second program code of computing a degree of deviation between each combination of the extracted multiple images;

5 a third program code of selecting at least two images among the extracted multiple images, based on the computed degrees of deviation;

a fourth program code of combining the at least two selected images to generate the one still image; and

a recording medium that stores said first to fourth program codes.